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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/661,275	09/14/2000	Deanna Lynn Quigg Brown	AUS9-2000-0476-US1	8839

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EXAMINER

LIN, WEN TAI

ART UNIT	PAPER NUMBER
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2154

DATE MAILED: 01/20/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/661,275

Applicant(s)

QUIGG BROWN ET AL.

Examiner

Wen-Tai Lin

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– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 September 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-75 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10, 12, 14-19, 21, 23-35, 37, 39-44, 46, 48-60, 62, 64-69, 71 and 73-75 is/are rejected.
- 7) ☒ Claim(s) 11, 13, 20, 22, 36, 38, 45, 47, 61, 63, 70 and 72 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

1. Claims 1-75 are presented for examination.
2. Claims 1-75 are objected to because of the following issues:
 - (i) As to claims 1, 26 and 51, a first TCP packet is used for testing whether a first gateway is operative or not; if no response (i.e., no acknowledgement) is received from the receiver host, then a second gateway is used for sending said first TCP packet. However, dependent claims 6-7 requires that a new communication be established using the first gateway by said application (claim 6) or by a new application (claim 7). It is not clear whether said first gateway has been restored to its operative status or nothing has been done to the first gateway since the first non-responsive TCP packet was sent.

For purpose of prior art rejection in this office action, the first gateway is construed as being restores to working conditions in claims 6-7.

Correction/Clarification is required in response to this office action.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-10, 12, 14-19, 21, 23-35, 37, 39-44, 46, 48-60, 62, 64-69, 71 and 73-75 are rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA [Applicant admitted prior art] in view of Braden [RFC 1122].

5. As to claims 1-10, 12 and 14, AAPA teaches the invention substantially as claimed including: a method for selecting an alternative path upon detection of a dead gateway comprising the steps of:

- sending a first TCP packet of data from an application of a sender host to a receiver host through a first gateway;
- failing to receive an acknowledgment of received data from said receiver host; and
- selecting an alternative path to send said first TCP packet of data from said sender host to said receiver host through a second gateway in a routing table in said sender host [Specification: page 3, lines 22-26].

AAPA is silent about deleting an ARP entry associated with said first gateway in said sender host in response to said failing.

However, Braden teaches that out-of-date ARP cache entries can be flushed by using (i) timeout mechanism and/or (ii) unicast poll (i.e., delete the relevant entry if no ARP reply for N successive polls) [Braden: Sec 2.3.2.1]. Note that Braden also teaches

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that TCP or any connection-oriented transport protocol should be able to give negative advice about the availability of the gateway, e.g., triggered by excessive retransmission [Braden: Sec 3.3.1.4].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of AAPA and Braden by applying the mechanisms proposed in Braden to AAPA's out-of-date ARP entries because clearing up the ARP entries relating to a failed gateway can preserve memory space for the alternative gateway.

As for the additional features depicted in claims 2-10, 12 and 14: it is noted that Braden's teachings are obviously also applicable to all these limitations because RFC 1122 is designed for detection of gateway failures [Sec. 3.3.1.4] and choosing alternative gateways [Sec. 3.3.1.5], which includes TCP/IP communication: that is,

- both the first and second gateways are a first-hop away from said sender host (claim 2);
- sending the first TCP packet through said first gateway for a consecutive number of times (claim 3) [i.e., retransmitting when it fails to obtain acknowledgement from the receiving end];
- said routing table in said sender host is located in a network layer of a TCP/IP protocol suite (claim 4);
- said network layer is an IP layer (claim 5);
- said first gateway is used for establishing a new TCP communication in either said application or a new application of said sender host (claims 6-7) [e.g.,

after the failed first gateway is restored, it is obvious that a new TCP communication can be established using the first gateway];

- sending an ARP request to said first gateway by said sender host for a consecutive number of times (claims 8-9) [In Sec. 3.3.1.4 Braden teaches that failure to ARP or to revalidate ARP mappings may be used as a negative indication of gateway failure], wherein if the gateway is operative then a second TCP packet may be sent using the same gateway (claim 10), or if the first gateway fails to response to ARP, then select an alternative gateway (claim 12) [Sec. 3.3.1.5] and thus a second TCP packet should be directed to the alternative gateway (claim 14).

6. As to claims 15-16, AAPA and Braden teaches ranking the gateways in priority order.

AAPA and Braden does not specifically teach marking all routes that use said first gateway to a lower priority level from an original priority level in said routing table in said sender host and return to its original priority level after a duration of time.

However, it is well known in the art rank a potentially unavailable gateway, such the ones undergoing diagnostic or fault recovery process.

Thus it is an obvious option to an ordinary skill in the art to lower the priority of the failed gateway and return its priority to the original level after an estimated duration of time that is required to fully restore the faulty gateway, because by doing so it would lower the risk of attempting for a failed gateway before it becomes fully functional again.

7. As to claims 17-19, 21, 23-35, 37, 39-44, 46, 48-60, 62, 64-69, 71 and 73-75, since the features of these claims can also be found in claims 1-10, 12 and 14 they are rejected for the same reasons set forth in the rejection of claims 1-10, 12 and 14 above.

8. Claims 11, 13, 20, 22, 36, 38, 45, 47, 61, 63, 70 and 72 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Alexander et al.	[U.S. Pat. No. 5949753];
Lorrain et al.	[U.S. Pat. No. 6631137];
La et al.	[U.S. Pat. No. 6654359]; and
Gelman et al.	[U.S. Pat. No. 6415329].

10. A shortened statutory period for response to this action is set to expire 3 (three) months and 0 days from the mail date of this letter. Failure to respond within the period for response will result in ABANDONMENT of the application (see 35 U.S.C. 133, M.P.E.P. 710.02, 710.02(b)).

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wen-Tai Lin whose telephone number is (703)305-4875. The examiner can normally be reached on Monday-Friday (8:00-5:00) .

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Follansbee can be reached on (703)305-8498. The fax phone numbers for the organization where this application or proceeding is assigned are as follows:

(703)872-9306 for official communications; and

(703)746-5516 for status inquires draft communication.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-3900.

Wen-Tai Lin

January 12, 2004

Wen-Tai Lin
1/12/04